

Language Sample Collection and Analysis: Interview Compared to Freeplay Assessment Contexts

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Spontaneous language samples elicited during freeplay and interview contexts were compared for 10 children who were specifically language impaired (SLI). Clinician-child videotaped interactions were analyzed for both structural and conversational behaviors. The results indicated that the interview was a reliable and valid assessment context, eliciting the same profile of behaviors as the freeplay context without altering diagnostic classifications. Most behaviors occurred significantly more often during the interview than during the freeplay context, indicating further that interviews are an efficient language sampling alternative for assessment purposes with elementary school-aged children with language disorders.

KEY WORDS: language assessment, language sample collection, language disorders, discourse assessment

The spontaneous language sample traditionally has been a major component of clinical assessment protocols (Bloom & Lahey, 1978; Darley & Moll, 1960; Davis, 1937; Emerick & Hatten, 1979; Gallagher, 1983; Johnson, Darley, & Spriesterbach, 1963; Lund & Duchan, 1988; McCarthy, 1930; McLean & Snyder-McLean, 1978; Miller, 1981). A variety of methods has been employed to collect language samples, including encouraging the child to play with toys in freeplay interactions, to describe pictures, or to retell stories.

Alternative means of assessing children's linguistic knowledge have involved more highly structured methods, particularly formal tests and elicited imitation tasks. The principal advantages of these more highly structured observations are their apparent efficiency and ease of data collection. In addition, more structured interactions may reduce variation in the child's language use, increasing the reliability of the expressive language profiles obtained (Fujiki & Brinton, 1983; Miller, 1981).

However, there are several problems with the use of highly structured elicitation techniques as assessment tools. For example, studies investigating the relationship between linguistic behaviors sampled during elicited imitation and those produced during less structured spontaneous speech reveal that more highly structured elicitations do not consistently predict children's spontaneous performance (Connell & Myles-Zitzer, 1982; Dailey & Boxx, 1979; Fujiki & Brinton, 1987; Lahey, Launer, & Schiff-Myers, 1983; Prutting, Gallagher, & Mulac, 1975). Further, highly structured observations of children's language not occurring within the context of natural discourse are void of a primary intention to communicate. These elicitations may, therefore, underestimate the child's actual linguistic knowledge and provide little information regarding the child's discourse skills (Bloom, 1974; Hood & Lightbown, 1978; Morehead, 1975; Prutting, Gallagher, & Mulac, 1975). The spontaneous language sample, therefore, provides a means of assessing syntactic, semantic, and discourse regulation skills of children, whereas a highly structured context, such as

elicited imitation, not only constrains the child's linguistic production, but precludes the evaluation of the child's conversational skills.

Pragmatic language approaches have highlighted the effects of different contexts upon the conversational behaviors being assessed. Children's language use has been observed to vary with different speaking partners and in different environments (Olswang & Carpenter, 1978; Scott & Taylor, 1978; Wellen & Broen, 1982). As a result of this variability, the collection of spontaneous language samples generally has been within freeplay interactions that permit low-structured unobtrusive observations and more closely preserve the naturalness of verbal interaction.

Unfortunately, there are also several difficulties inherent in the use of freeplay interactions as a means of collecting spontaneous language samples. One major problem relates to the time-intensive nature of collecting spontaneous language samples within freeplay contexts. The clinical goal involves eliciting a language sample that contains enough information to accurately represent the child's expressive capabilities. The time required to provide opportunities for the occurrence of a full range of structural and conversational behaviors may be considerable, however, requiring as long as several half-hour interactions (Bloom & Lahey, 1978; Gallagher, 1983; Miller, 1981). Additionally, the greater emphasis on the assessment of pragmatic behaviors, some of which may occur infrequently during naturally occurring spontaneous discourse, has resulted in an increased tension within assessments between behavioral validity and clinical efficiency.

Coupled with increased time requirements, a second major limitation of freeplay language sampling is the variable and potentially unsystematic effects of different toys and play materials on children's language use. Clinicians have been advised to use unfamiliar or novel toys that match the cognitive level, interest, and auditory, visual, and motor functioning of the child (Lund & Duchan, 1988; Miller, 1981). Several researchers, however, have indicated that children's language use varies according to the types of toys presented to the child (Bloom & Lahey, 1978; Cook-Gumperz & Corsaro, 1977; Gallagher, 1983; Miller, 1981; Rubin & Seibel, 1979).

Thus, collecting representative language samples during freeplay interaction may be problematic for clinicians. More time may be required for adequate sampling of infrequent behaviors, and more than one sample may be necessary to ensure that the corpus is representative. Additionally, variability may be introduced through the toys used during the play sessions because no standardized protocol exists for the types of play materials clinicians should use, nor is there sufficient information regarding individual children's attentiveness or responsiveness to the same play materials.

A possible alternative to the traditional freeplay interaction is the interview context. As noted by Dollaghan, Campbell, and Tomlin (1990), probing questions and comments are a frequent clinical sampling strategy with older children. Additionally, researchers using language sampling with adults have successfully employed interviews to elicit representative language samples for structural and conversational analysis purposes (Brenner, 1981; Sacks, Schegloff, & Jef-

erson, 1974; Schiffrin, 1986). Interviews with children might enable the clinician to assess both the structural and conversational skills of a child client within a context that is moderately structured, while preserving naturalness in the verbal interaction. Both structural and conversational behaviors could be sampled. Although the range of potential topics expressed by the child may be limited or controlled within an interview, the child's specific linguistic choices are not, and in this sense an interview sample meets the requirement for a spontaneous sample. Additionally, the potential variability and distraction introduced by play materials would be eliminated.

The present study, therefore, explored the feasibility of using an interview as an assessment context. Structural and conversational characteristics of the discourse of 10 children who were specifically language impaired were established using a standard freeplay language sampling protocol. Interviews were also collected from the same children and then performances on the same measures compared to explore the comparability of the two as assessment contexts. Both contexts sampled dyadic clinician-child interactions in order to enhance generalizability of the findings to clinical evaluations.

Method

Subjects

The subjects for this study were 10 children with specific language impairment (SLI), based upon Stark and Tallal's (1981) criteria. The subjects ranged in age from 8;1 to 9;2 (years:months), with a mean age of 8;5. Half the subjects in the group were boys and half were girls. All of the subjects were from White, middle-income families (Hollingshead, 1975).

The subjects all met Stark and Tallal's (1981) exclusion criteria. These included no hearing loss, no significant behavioral or emotional problems, no demonstrable neurological involvement, no oral motor deficits, and a Wechsler Intelligence Scale for Children—Revised (Wechsler, 1974) performance IQ of 85 or full-scale IQ greater than 70. All of the subjects had previously been diagnosed by a certified speech-language pathologist as SLI and were receiving services in the public schools.

Children identified as Expressive/Receptive or as Expressive SLI were included in the study to increase the representativeness of the findings across the SLI population (see Table 1). All subjects' expressive test scores fell either below the 10th percentile or 3 years or more below age level expectations. Children were designated Expressive SLI subjects based upon their receptive test scores approximating normal ranges. Children were designated as Expressive/Receptive if both receptive and expressive scores were significantly impaired. In order to confirm the clinicians' reports and classify the subjects according to disorder subgroups, the following language measures were administered: (a) both expressive and receptive subtests of the Clinical Evaluation of Language Function—Revised (CELF-R) (Semel, Wiig, & Secord, 1988); (b) the Peabody Picture Vocabulary Test—Revised (PPVT-R) (Dunn & Dunn, 1981);

TABLE 1. The chronological age (years:months), sex, expressive (E) or expressive-receptive (E + R) subtype, and language structural stage (Miller & Chapman, 1981), for each SLI child.

Subjects	CA	Sex	Subtypes	Stage
1	9:2	M	E + R	Late V
2	8:7	M	E	Early IV
3	8:3	M	E + R	III
4	8:5	M	E + R	Late I
5	8:6	M	E + R	Early IV
6	8:2	F	E	Late IV/Early V
7	8:11	F	E	Late IV/Early V
8	8:3	F	E + R	III
9	8:2	F	E + R	Late IV/Early V
10	8:1	F	E + R	II

and (c) the Developmental Sentence Analysis yielding a Developmental Sentence Score (DSS) (Lee, 1974).

Presentation Procedure

Each subject was videotaped for half an hour in an adult-child interaction with a female experimenter who was a certified speech-language pathologist. Two separate contexts were created within the half-hour session and their order was randomized.

One context, designated *freeplay*, was 15 min in duration and was designed to parallel language sampling methods described in the assessment literature (Bloom & Lahey, 1978; Lee, 1974; Lund & Duchan, 1988; Miller & Chapman, 1981). Within the freeplay interaction, the adult presented the child with a set of play materials selected for appropriate age and interest levels. The children were allowed to select freely from among the following action figure toys: animal puppets, farm toys, emergency rescue vehicles, Ken and Barbie dolls, and GI Joe dolls. All children seemed interested in playing with the toy set they selected as evidenced by continuous play with that selection for the duration of the sample. Only one of the children, Subject SLI3, asked to change toy sets and did so. The children determined the nature of the play activity, and the adult followed each child's lead.

The other context, designated *interview*, was also 15 min in duration. The child was asked to talk about his or her family, school, and free-time activities. The interview prompts are presented in the Appendix. In order to parallel the freeplay interaction, the adult again followed the child's lead after the topic had been introduced. The same experimenter interacted with all subjects in both contexts.

For the purposes of this investigation, the freeplay context was considered the standard assessment context because it paralleled recommendations in the literature for creating language sample collection contexts. Each child's MLU and DSS, described above, were determined from the freeplay context. Performances obtained within the interview context were compared to the standard performances established for each child within freeplay.

The language samples were video recorded either with a remote control video camera mounted in a videotaping studio, or a video camera mounted on a tripod and a video recorder in a quiet classroom. Either external digital controls

or real-time internal counters modified the videotapes to facilitate segmentation and scoring. This procedure yielded 5 hours of videotaped interactions.

Scoring Procedure

The language samples from each of the two contexts were transcribed orthographically, segmented into utterances, and scored according to the following structural and conversational characteristics.

Structural Characteristics of the Children's Samples

Child utterances from the freeplay and the interview contexts were scored according to the following syntactic and semantic categories.

Developmental sentence analysis (Lee, 1974). The first 50 consecutive utterances composed of a subject and a predicate were used to calculate a Developmental Sentence Score (DSS). DSSs were compared to normative mean scores to obtain an estimate of language delay, and provided a means by which to determine whether the interview context was quantitatively as revealing diagnostically as freeplay.

Mean length of utterance (MLU) (Brown, 1973; Miller & Chapman, 1981). An MLU score was computed for the interview context from the first 100 consecutive utterances and compared to the MLU obtained for freeplay. These scores provided a means by which to estimate and compare the sentence lengths produced by the children during freeplay and interview.

Advanced syntactic features. In order to sample and compare the grammatical complexity of the utterances elicited in the interview to those elicited during freeplay, the following procedure was employed. Specific syntactic features were selected as representative of the language developmental stages beyond that identified for each subject based upon the freeplay MLU calculation following a method described by Craig and Gallagher (1979). These features were determined based upon the descriptions of Brown (1973), DeVilliers and DeVilliers (1973), and Lund and Duchan (1988). The advanced syntactic features designated for Stage I included prepositions, *-ing* verb endings, plural noun + *s*, possessive *s*, verb tense markers */s/* and */ed/*, and any advanced features designated for Stages II, III, IV, and V. The advanced syntactic features designated for Stage II included uncontractible copula or auxiliary, interrogative inversions, *do*-support, infinitives, irregular verbs, and those advanced features designated for Stages III, IV, and V. The advanced syntactic features designated for Stage III included contractible copula and auxiliary and advanced features for Stages IV and V. The advanced syntactic features designated for Stage IV and V included object-noun phrase complements, clausal conjunctions, and relative clauses.

The total number of advanced syntactic features was computed for each subject and then converted into percentage frequencies of occurrence by context. This measure permitted evaluation of the efficiency with which each con-

text, in the same 15-min time period, elicited examples of the children's most complex grammatical forms.

Type-token ratio (TTR) (Templin, 1957). The first 50 consecutive child utterances were used to calculate TTRs for both contexts. Type-token ratios provided a means by which to compare the diversity of the vocabulary expressed in the interview compared to the freeplay contexts (Miller, 1981).

Advanced semantic features. Relational semantic development has been described previously in terms of eight phases that correspond to the child's MLU (Bloom & Lahey, 1978; Lahey, 1988). In the present study, advanced semantic features were designated for each subject by determining the phase of semantic development (Lahey, 1988) that corresponded to the child's MLU during freeplay and then identifying semantic relations characteristic of phases beyond each child's level. Accordingly, the advanced semantic features for Stage I were notice/perception, temporal, additive, causal, specification, dative, epistemic, adversative, and communication; for Stage II, they were additive, causal, specification, dative, epistemic, adversative, and communication; and for Stage III-V, they were epistemic, adversative, and communication.

Parallel to the methods described above for calculating advanced syntactic features, each subjects' advanced semantic features were computed and then converted into percentage frequencies of occurrence by context. This analysis provided the basis to evaluate how readily the interview context elicited the child's most complex utterance meanings, compared to freeplay, in the same 15-min period.

Conversational Characteristics of the Children's Samples

To explore and compare a variety of discourse behaviors described in the literature, the freeplay and interview contexts were scored for the following conversational characteristics.

Intentions. All utterances were coded as one of four intentional acts based upon the definitions of Dore (1974), Gallagher (1981), McShane (1980), and Searle (1975), as follows: *Requests*—questions or imperatives that solicited action, information, permission, or attention; *Answers*—statements or stereotypical lexical items such as "yes" and "no" that responded to a prior adult request; *Comments*—semantically related statements or acknowledgments following a prior adult comment, and statements or greetings that were unrelated to the prior adult utterance; and *Clarifications*—contingent queries by the child or responses to prior adult contingent queries.

Turn-taking. Turns were examined by scoring and segmenting nonsimultaneous and simultaneous utterances (Gallagher & Craig, 1982). Nonsimultaneous utterances reflect instances when the turn exchange system is operating smoothly, whereas simultaneous turns involve two speakers overlapping in time. For some SLI children, simultaneous utterances reflect true interruptions, whereas others are better characterized as turn-taking errors (Craig & Evans, 1989). Accordingly, simultaneous child utterances were scored as *Interruptions*—sentence internal and precision-timed turn completion projections that relate to the prior nonoverlapped portion of the adult's utterance within the

simultaneous turn, and *Errors*—slow responses to the prior adult turn that preceded the simultaneity that occurred in the form of double-starts by both speakers.

Responsiveness. The interutterance pause time between adult utterances was determined. A *No-response* turn for the child occurred when the time between two consecutive adult utterances was 1.5 sec or greater. A pause of this duration was considered sufficient for the child to initiate a response but he or she did not do so. Interutterance pauses between consecutive adult utterances that were less than 1.5 sec were scored as *No-opportunities* because they were potentially too brief in duration for the child to initiate a response. These definitions of both *No-response* and *No-opportunity* turn types were based upon Craig and Gallagher's (1983) scoring criteria.

Responses were scored further as *Adjacent* or *Nonadjacent*. The child's utterance was scored as temporally adjacent to the adult's preceding utterance if it occurred within 2 sec of the end of the adult's turn (Bloom, Rocissano, & Hood, 1976; Craig & Gallagher, 1983; and Garvey & Berninger, 1981). The child's utterance was scored as temporally Nonadjacent if the interval was greater than 2 sec.

In order to examine the degree to which the children were able to relate their utterances to prior discourse, Adjacent utterances were scored further as *Contingent* or *Noncontingent* based upon Bloom et al.'s criteria (1976). Semantically unrelated utterances were scored as Noncontingent. Imitations of adult utterances were excluded from this data set because of their low frequency of occurrence at the age and language stages of the subjects and because of their ambiguous nature as conversational responses. An Adjacent utterance was scored as Contingent if it was semantically related to the adult's preceding utterance.

Adult Behaviors

To determine the extent to which systematic differences in the adult's behavior across the two contexts might relate to the observed differences in the children's behaviors, the adult's language samples were scored for a selected set of structural and conversational characteristics, as follows.

Mean number of utterances. The numbers of utterances produced by the adult for the freeplay and the interview contexts were compared, as a way to examine potential differences in the adult's overall amount of talk in the two contexts. Verbosity levels by the adult might relate to verbosity differences between contexts by the children.

Mean length of utterance (MLU) (Brown, 1973; Miller, & Chapman, 1981). A separate MLU score was computed for the adult in each context based upon the first 50 utterances. These scores provided an estimate of sentence complexity differences between the freeplay and interview contexts, based upon morpheme production.

Turn opportunities. To determine the extent to which the adult provided the children with comparable opportunities to talk in both contexts, turn opportunities were examined. Child utterances scored as responses and consecutive adult utterances separated by pauses greater than 2 sec were added together and considered turn opportunities for the child.

Topic change. To evaluate the extent to which the adult maintained comparable levels of conversational assertiveness between contexts, the adult's utterances were scored for the presence or absence of Topic Changes based upon Brinton and Fujiki's (1984) scoring criteria. An utterance was scored as a Topic Change or a topic refocus if it met one of the following criteria:

1. The adult's utterance introduced a new topic or focus of discussion in the interview or a new focus in the direction of the play activities that had not been mentioned previously in the activity. The following is an example of an adult Topic Change during freeplay (topic change utterances are indicated by **).

Topic: *puppets playing tag*

SLI3: "Okay, now you're it."

Adult: "Okay, the turtle's it."

SLI3: "I gotcha."

**Adult: "Do you wanna change toys or keep playing with the puppets?"

Topic: *Adult suggests new toys*

The following is an example from an interview (topic change utterances are indicated by **).

Topic: *grandparents*

Adult: "And those are all the grandparents you have?"

SLI2: "Well, I got some more in Albuquerque."
SLI2: "But I don't know any of them."

Adult: "So they live far away, huh?"

**Adult: Okay, now tell me a little bit about school."

Adult: "What kinds of stuff do you do?"

Topic change: *school*

2. The adult's utterance re-introduced a previous but not immediately preceding topic of discussion or focus of play. An example during an interview was as follows:

Topic: *the child's sisters*

Adults: "So what can you tell me about your family?"

SLI5: "Sometimes and Patsy and Stephany work all the time."

Adult: "Now who are Patsy and Stephany?"

SLI5: "My sisters. And my dad works."

New topic: *father*

Adult: "Tell me a little bit about that."

SLI5: "He works midnight."

Adult: "Tell me a little about what he does."

SLI5: "He drives at Fords."

Adult: "Drives, okay."

**Adult: "So now tell me a little bit more about what Patsy and Stephany do."

Topic reintroduction: *sisters*

Reliability

Ten percent of each subject's entire language sample was identified, transcribed, and scored by an independent observer. The percentage agreement between experimenter and observer for transcription and scoring reliability was high: (a) words 82%, (b) utterance boundaries 92%, (c) Simultaneity 92%, and (d) Timing (the basis for Response, No-Response, Adjacent, and Nonadjacent) 93%, (e) verbal behaviors used to derive Developmental Sentence Scores 87%, (f) Advanced Syntactic Features 87%, (g) Advanced Semantic Features 88%, (h) Intentions 88%, and (i) Adult Topic Changes 85%.

Results

Approximately 3,650 child utterances were transcribed and scored. The structural and conversational characteristics of these utterances were examined for systematic variations between the freeplay and interview contexts. Pairwise *t* tests were performed when appropriate to facilitate statistically the interpretation of the data obtained. The results were as follows.

Structural Characteristics

Syntax. The children produced more utterances within the interview context ($M = 226$ utterances) than the freeplay context ($M = 139$ utterances), as shown in Table 2. A pairwise *t* test indicated that the context differences were significant statistically [$t(9) = 8.75; p < .01$].

Developmental Sentence Scores were determined for each child's samples and these values are reported in Table 2. The mean DSS values for the freeplay context (6.93) and the interview context (6.61) were not different statistically.

The sentence lengths of each child's sample were examined by calculating an MLU for each context. The MLU values obtained were significantly greater within the interview (4.10) compared to the freeplay context (3.12) [$t(9) = 3.90; p < .01$].

Comparison of the percentage frequencies of occurrence of Advanced Syntactic Features by context revealed differences between freeplay and interview. Most advanced grammatical forms were produced by the children in the interview context ($M = 71\%$) rather than the freeplay context ($M = 29\%$). These context differences were significant statistically [arcsine transformed $t(9) = 3.24; p = .01$].

Semantics. Lexical diversity within each context was estimated by calculating Type-Token Ratios for freeplay and interview (see Table 3). Statistical comparisons revealed insignificant differences ($M = .52$ for both contexts).

Comparison of the percentage frequencies of occurrence of Advanced Semantic Features by context revealed differences. These distributions are presented in Table 3. Most developmentally advanced sentence meanings were produced by the children in the interview ($M = 80\%$) rather than the freeplay ($M = 20\%$) context. These differences were significant statistically [arcsine transformed $t(9) = 5.63; p < .01$].

Summary. Interviews yielded more child utterances and longer sentence lengths. In addition, advanced syntactic and

TABLE 2. Number of total utterances, Developmental Sentence Scores (DSS), MLUs, and percentage frequencies of occurrence of Advanced Syntactic Features (ASF) for freeplay (F) and interview (I) contexts.

Subjects	Utterances		DSS		MLU		ASF		
	F (N)	I (N)	F	I	F	I	(N)	F (%)	I (%)
1	144	243	6.88	7.20	4.09	4.21	31	55	45
2	108	226	5.78	6.36	3.08	5.43	23	9	91
3	205	268	6.12	6.78	2.89	3.86	67	28	72
4	79	212	6.65	7.04	1.90	3.05	193	7	93
5	135	274	6.34	6.32	3.34	3.51	19	0	100
6	134	192	5.52	5.96	3.56	4.45	22	32	68
7	158	229	8.33	7.16	3.64	4.40	23	39	61
8	123	183	6.78	8.90	2.63	4.91	7	43	57
9	194	260	5.72	5.88	3.66	3.87	4	50	50
10	106	176	8.00	7.70	2.45	3.17	105	27	73
Total	1,386	2,263					494		
M	139	226	6.61	6.93	3.12	4.10	49	29	71

Note. N = number of utterances.

semantic features were more likely to occur in the interview context. DSSs and TTRs did not change between contexts.

Conversational Characteristics

Intentions. The profiles for the intentional acts obtained within freeplay and interviews are presented in Table 4. In both contexts, most intentional acts were comments ($M = 55\%$ for freeplay and 64% for interview). Utterances that were answers as well as those that were part of a request for clarification pair also occurred with comparable percentage frequencies in both contexts. None of these distributions were significantly different statistically at an alpha level of .025 (appropriate for four multiple t tests on the same data set). However, requests were significantly more frequent in freeplay ($M = 18\%$) compared to interview ($M = 2\%$) contexts [arcsine transformed $t(9) = 4.40$; $p < .01$].

Turn-taking. Most utterances were nonsimultaneously produced in both the freeplay ($M = 91\%$) and interview ($M = 86\%$) contexts, (see Table 5), indicating that most of the time, turn exchanging proceeded smoothly in both contexts. However, nonsimultaneous utterances were more frequent during

freeplay (91%) than interview (86%), and simultaneous utterances were more frequent during interview (14%) compared to freeplay (9%). A pairwise t test indicated that these differences were significant statistically [arcsine transformed $t(9) = 2.29$; $p < .05$].

The increase in simultaneity for the interview context reflected an increase in both Interruption and Error subtypes of simultaneity. The subjects produced 174 instances of Interruptions in which the children's overlapping utterances were a precision-timed turn completion projection of the nonoverlapped portion of the adult utterance. Of these interruptions, most occurred in interview (76%) compared to freeplay for all but 1 child (see Table 5). These context differences were significant statistically [arcsine transformed $t(9) = 3.87$; $p < .01$]. In addition, the subjects produced 340 instances of turn exchange errors; 31% occurred in freeplay, whereas 69% occurred during interviews (see Table 5). These context differences were also significantly different [arcsine transformed $t(9) = 5.53$; $p < .01$].

Responsiveness. The children's levels of responsiveness were high and varied systematically by context (see Table 6). Utterances were scored as Responses any time the child

TABLE 3. Type-Token Ratio (TTR) and percentage frequencies of occurrence of Advanced Semantic Features (ASmF) for freeplay (F) and interview (I) contexts.

Subjects	TTR		ASmF		
	F	I	(N)	F (%)	I (%)
1	.41	.59	25	32	68
2	.57	.42	17	24	76
3	.58	.62	60	23	77
4	.34	.45	46	20	80
5	.48	.47	97	5	95
6	.58	.55	18	44	56
7	.56	.57	21	29	71
8	.59	.53	28	4	96
9	.55	.53	28	0	100
10	.51	.51	111	22	78
Total			451		
M	.52	.52		20	80

Note. N = number of utterances.

TABLE 4. The percentage frequencies of occurrence of Requests, Answers, Comments, and Clarifications (Clar) for the freeplay (F) and interview contexts (I).

Subjects	Requests		Answers		Comments		Clar	
	F (%)	I (%)	F (%)	I (%)	F (%)	I (%)	F (%)	I (%)
1	12	1	38	24	65	74	1	1
2	17	2	28	38	53	58	2	2
3	18	1	25	32	56	66	1	1
4	10	1	45	37	42	61	3	1
5	19	2	19	34	57	62	5	2
6	16	0	19	35	64	64	1	1
7	16	2	15	28	68	69	1	1
8	11	1	23	38	64	60	2	1
9	54	9	24	29	21	60	1	2
10	6	0	38	36	55	64	1	0
M%	18	2	27	33	55	64	2	1

spoke following an adult utterance and No-responses any time the adult gave the child an opportunity to take a turn but the child did not do so. These latter instances were defined as adult interutterance pause times greater than 1.5 sec. Most of the time the children responded when provided the opportunity to do so in both contexts (freeplay 63%, interview 92%). However, the children were more responsive during the interview than during freeplay. A pairwise *t* test of arcsine transformed data indicated that these differences between the two contexts were significant statistically [$t(9) = 9.56$; $p < .01$].

The children's Responses were primarily temporally Adjacent to the preceding adult utterance ($M = 76\%$ for freeplay and 89% for interview). The extent to which the children followed the adult turn quickly with one of their own was significantly greater within the interview context, however [arcsine transformed $t(9) = 4.72$; $p < .01$].

The semantic relationship of the children's turns to the preceding adult turn was then examined. Most of the children's successive utterances were semantically Contingent to the prior adult utterance ($M = 88\%$ for freeplay and 97% for interview) in both contexts (see Table 6); however, the children were significantly more Contingent to the prior

discourse during the interview [arcsine transformed $t(9) = 3.47$; $p < .01$].

Summary. Compared to freeplay, interviews were characterized by significantly more simultaneity and greater responsiveness. Although freeplay resulted in significantly more child requests, other intentional acts were not different between contexts.

Adult Behaviors

Systematic differences in the behavior of the adult between the two contexts might relate to the contextual differences observed in the children's behaviors. Both structural and conversational characteristics of the adult's samples were examined, therefore, and compared between contexts. The results were as follows.

Structural characteristics. The mean number of utterances produced by the adult in the freeplay context was 272 and in the interview context was 328. This greater number of utterances produced during interview samples was significant statistically [$t(9) = 2.70$; $p < .05$]. The average sentence lengths of the adult in both contexts were estimated by

TABLE 5. Percentage frequencies of occurrence of nonsimultaneous (NSIM) and simultaneous (SIM) turn characteristics and of interruptions and errors for freeplay (F) and interview (I) contexts.

Subjects	Turns				SIM			
	NSIM		SIM		Interrupt		Errors	
	F (%)	I (%)	F (%)	I (%)	F (%)	I (%)	F (%)	I (%)
1	93	93	7	7	0	100	19	81
2	90	78	10	22	25	75	36	64
3	87	87	13	13	25	75	45	55
4	94	87	6	13	0	100	19	81
5	86	89	14	11	17	83	46	54
6	90	91	10	9	19	81	25	75
7	89	88	11	12	22	78	38	62
8	95	84	5	16	64	36	30	70
9	95	82	5	18	38	62	20	80
10	88	85	12	15	33	67	36	64
M%	91	86	9	14	24	76	31	69

TABLE 6. Percentage frequencies of occurrence of No Response (NR), Response (R), Nonadjacent (NAdj), Adjacent (A), Noncontingent (NC) and Contingent (C) utterances for freeplay (F) and interview (I) contexts.

Subjects	Responses								Adj			
	NR		R		NAdj		A		NC		C	
	F (%)	I (%)	F (%)	I (%)	F (%)	I (%)	F (%)	I (%)	F (%)	I (%)	F (%)	I (%)
1	31	11	69	89	36	8	64	92	8	3	92	97
2	45	7	55	93	28	7	72	93	11	0	89	100
3	26	4	74	96	13	5	87	95	7	3	93	97
4	55	15	45	85	17	12	83	88	0	6	100	94
5	36	3	64	97	18	7	82	93	13	5	87	95
6	39	9	61	91	29	26	71	74	15	0	85	100
7	32	6	68	94	30	13	70	87	23	2	77	98
8	43	6	57	94	22	16	78	84	20	3	80	97
9	18	7	82	93	23	4	77	96	18	4	82	96
10	43	13	57	87	19	12	81	88	1	0	99	100
M%	37	8	63	92	24	11	76	89	12	3	88	97

calculating MLUs for each sample. The average sentence length across subjects was 4.47 for freeplay and 4.50 for interview. These analyses indicate that the adult was more verbose during interviews but presented essentially comparable sentence form to each child in both contexts.

Conversational Characteristics

The extent to which the adult provided the children an equal opportunity to talk in both contexts was determined. The percentage frequency of occurrence of opportunities was comparable for the two contexts, freeplay 60% and interview 52%. They were not different statistically.

In addition to providing an equal opportunity to talk, the extent to which the adult directed the focus of the interactions in the two contexts was compared. The mean percentage frequencies of occurrence of adult utterances that changed the topic rather than followed the child's lead were low and the same in both contexts, 4%.

These analyses indicate that although the adult was more verbose during the interviews, she presented essentially comparable sentence structure to each child, provided the same opportunities to talk, and redirected the focus of the interactions to the same extent in both contexts.

Discussion

These data reveal substantial differences between the freeplay and interview contexts. Structurally, the interviews were composed of significantly more child utterances, and the average sentence lengths were longer. The children produced more of their syntactically and semantically complex forms within the interview contexts. Conversationally, significantly more requests were produced during freeplay than interview. However, more simultaneous speech was produced during the interview, and, in comparison to the children's freeplay samples, these overlapping utterances reflected increases in both interruptions and errors. The children appeared more responsive during the interviews,

and their responses were more temporally Adjacent and more semantically Contingent than during freeplay.

A few analyses generated insignificant contextual differences. The subjects' DSSs were not significantly different between freeplay and interview, and, therefore, the diagnostic classification of the children was maintained. In other words, the interview context did not inflate the language structural behaviors of the children, potentially altering their characterization. It is interesting that despite considerable conceptual similarity between MLU and DSS analytical procedures, the MLU was sensitive to contextual differences in the present study whereas the DSS remained unchanged in interview and freeplay. Similarly, in previous research Kramer, James, and Saxman (1979) found that MLUs were greater for language samples elicited in a home compared to a clinic context, whereas DSS values were not different by context. As a whole, these data indicate that as a diagnostic tool, the DSA elicits stable performances across dissimilar conversational contexts, and that changes in sentence length may be the better index of other linguistic variations.

In addition, the TTRs calculated from utterances in the two contexts were essentially the same, indicating that both contexts were equally successful in eliciting a diverse set of vocabulary even though the interviews were potentially more constrained topically. Conversationally, the profiles of intentional acts elicited for the two contexts were highly similar. With the exception of requests, other speech acts, including comments, answers, and requests for clarification, were comparable for freeplay and interview. In general, interviews elicited all of the behaviors apparent during freeplay and in this sense offer a representative context for language assessment. These findings indicate that interviews are a potentially valid context for language assessment.

The interview also appears to be a more reliable assessment context. Compared to freeplay, less variability was observed in the behaviors elicited during the interviews. For both contexts the majority of the children's intentional acts were comments, the majority of the time the children were responsive to the adult, and the children predominantly

produced responses that were topically related and that did not contain instances of speaker overlap. The range of individual scores for number of utterances, requests, answers, comments, requests for clarification, no-responses, responses, and contingent and noncontingent utterances was smaller for the interview context, however. Accordingly, the more structured interview context may elicit more consistent language samples. Miller (1981) reported less variability within more structured verbal interactions in the use of children's language in terms of both syntactic constructions and the meanings expressed. The results of this investigation are consistent with Miller's observations, suggesting that the increased structure of the interview context may result in the more consistent conversational profile. This reliability issue warrants further investigation.

Overall, the interview also appears to be a more efficient assessment context. Although the same behaviors were observed for both the freeplay and the interview contexts, the majority of the behaviors occurred significantly more often during the interview. The children produced nearly twice the amount of language during the 15-min interview. This is particularly interesting because the interview is a context in which play materials are absent. Longhurst and File (1977) found that Developmental Sentence Scores decreased when toys and pictures were used with Head Start children compared to spontaneous conversation in the absence of stimulus materials. Although no significant differences were found for the DSS data of the language-impaired subjects in the present study, other structural gains were observed for the interviews when play materials were absent. Perhaps in both studies the toys were distracting. Alternatively, at least some of the variations between contexts may relate to the differences in the interactive styles involved. Dore (1978) and Hall and Cole (1978) observed that interactive style and task cooperation affected the linguistic complexity of children's talk. Perhaps the verbally interactive nature of the interview facilitates the performance of a broad spectrum of language behaviors. The data from the present study do not indicate whether the differences observed reflect the effects of props and toys and/or communication saliency. Regardless of the underlying reasons, however, an assessment context that allows elicitation of a spontaneous language sample in a short time span without the need for additional props or materials and that does not jeopardize diagnostic classifications should be advantageous clinically.

Behaviors that have been observed previously to occur with low frequency and that have traditionally been difficult to elicit also occurred significantly more during the interview. Structurally, the children produced syntactically more complex utterances, containing significantly more Advanced Syntactic Features during the interview. More Advanced Semantic Features also were produced during the interview. These increased frequencies probably relate to the general increase in amount of child talk in the interview. Regardless of the underlying explanation, however, the interview was more successful than freeplay in eliciting examples of the children's advanced structural skills.

Con conversationally, the children were more responsive and produced more simultaneous speech during the interview. Thus, a 15-min interview elicited more overall language,

more structurally advanced features, and more difficult-to- elicit but potentially revealing conversational behaviors from elementary-school-aged children.

It is possible that some of these advantages in interview are apparent only for children beyond the preschool years. The subjects in this investigation were 8–9 years of age. The children's prior school experiences may have contributed to their ability to interact during an interview with an unfamiliar adult, whereas younger children may be less comfortable with this context. Future research would be needed to clarify this issue.

Systematic differences in the adult's behavior could have resulted in the differences observed in the children's behavior across the two contexts, but the present findings indicate that this was not the case. Although more utterances were produced by the adult in the interviews, to the extent that sentence lengths reflect structural complexity, no differences were observed in the adult's utterances across the two contexts. Conversationally, no differences were observed in the degree to which the adult provided children the opportunity to talk in either context, nor in the degree to which the adult followed the child's lead in either the freeplay or interview. Like the adult, children produced significantly more utterances during the interviews than during freeplay. The increased verbosity of both the adult and the children may be related. The children may have been sensitive to the dynamic and reciprocal nature of conversation, thereby talking more as the adult did so. The other differences observed in the children's behaviors are not explained by differences in the adult's behavior, however, and may be reflective of differences between the two contexts themselves. The underlying bases for these differences remains unclear and warrants further investigation.

In conclusion, interviews represent a valid, reliable, and efficient spontaneous language sampling context that is easily obtained. The interview elicits critical behaviors of interest to the clinician in a short time frame without (a) omitting behaviors observed during freeplay, (b) jeopardizing conversational validity the way more highly structured tasks do, and (c) affecting the diagnostic validity of structural assessment tools.

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Appendix

Experimental Interview Protocol

Introduction

A. "Let's talk a little."

Question 1: (5 min)

A: "What can you tell me about your family?"
(Adult responds to child with rewording of child's comments or
"That's interesting, tell me some more about that.")

Question 2: (5 min)

A: "Are you in school?"
"Tell me about it."
(Adult responds same as above)

Question 3: (5 min)

A: "What do you like to do when you're not in school?"
(Adult responds same as above)

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